

REMARKS

The purpose of this Preliminary Amendment is to eliminate multiple dependent claims in order to avoid the additional fee. Applicants reserve the right to reintroduce claims to canceled combined subject matter.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**Version With Markings to Show Changes Made**".

Respectfully submitted,



I. William Millen , Reg. No. 19,544
Attorney for Applicants
MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
Arlington Courthouse Plaza 1
2200 Clarendon Boulevard, Suite 1400
Arlington, VA 22201
Direct Dial: 703-812-5325
Facsimile: 703-243-6410
Email: millen@mwzb.com

IWM:kmo

Filed: 11 MARCH 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1 and 3 to 17 were amended as follows:

1. (Amended) Synthetic vegetal melanins obtainable by in vitro polymerization of at least one monomer unit (a), and optionally at least one compound (b), wherein:

(a) is a plant polyphenol; and

(b) is an eumelanin precursors;

said synthetic vegetal melanin being characterized by a Red:Green:Blue ratio comprised between 1 : 0.88 : 0.84 and 1 : 0.64 : 0.41.

3. (Amended) Synthetic vegetal melanins according to ~~claims 1 to~~ claim 2, wherein the plant polyphenol of formula (I) with X being a residue of formula (II) is a flavonoid selected infrom the group consisting inof quercetin, fisetin, fustin, luteolin, OPC, catechin, epicatechin, GC, GCG, EGC, EGCG, myricetin, dihydroquercetin and mixtures thereof.

4. (Amended) Synthetic vegetal melanins according to ~~claims 1 to~~ claim 2, wherein the plant polyphenol of formula (I) with X being a residue of formula (III) is a flavonoid anthocyanins selected infrom the group consisting inof cyanidin, delphinidin and mixtures thereof.

5. (Amended) Synthetic vegetal melanins according to ~~claims 1 to~~ 2, wherein the plant polyphenol of formula (I) with X being a residue of formula (IV) is an open ring dihydroxyphenol selected infrom the group consisting inof hydroxytyrosol, protocatechuic acid, protocatechuic aldehyde, gallic acid, tannic acid and mixtures thereof.

6. (Amended) Synthetic vegetal melanins according to ~~claims 1 to 2~~, comprising said eumelanin precursor wherein the eumelanin precursor is selected infrom the group consisting inof L-dopa, DHI, DHICA, dopamine, pyrocatechol, pyrogallol and mixtures thereof.

7. ~~M~~(Amended) A method of producing synthetic vegetal melanins according to claims 1 to 6 comprising bubbling air or oxygen through an alkaline aqueous solution ~~of~~comprising the at least one monomers at a pH of at least 10 or higher, during 12 to 48 hours, at a temperature ranging from 10 to 90°C.
8. ~~M~~(Amended) A method of claim 7, ~~send~~ alkaline aqueous solution further comprising catalytic amounts of pro-oxidant metals selected ~~in~~from the group consisting ~~in~~of Cu^{++} , Fe^{++} , Ni^{++} , Co^{++} and ~~mixture thereof~~.
9. (Amended) A method of producing synthetic vegetal melanins according to claim 1 comprising polymerizing at the least one monomer with a chemical oxidizing agent is selected ~~in~~from the group consisting ~~in~~of hydrogen peroxide, hydrogen iodide, ammonium persulfate, potassium permanganate, magnesium perchlorate and mixtures thereof.
10. ~~M~~(Amended) A method of producing synthetic vegetal melanins according to claim 1 to 6 comprising bubbling air or oxygen through an buffered aqueous solution ~~of~~comprising the at least one monomers at a pH from 9.5 to 4.5, during 12 to 48 hours, at a temperature ranging from 20 to 45°C in presence of a suitable ~~melanin-forming~~ enzyme.
11. (Amended) Method of claim 10, wherein the enzyme is selected ~~in~~from the group consisting ~~in~~of tyrosinases, polyphenoloxidases (catanol oxidases), phenolases, (phenoloxidases), peroxidases, laccases, lypoxigenase, and mixtures thereof.
12. ~~M~~(Amended) A method according to claims 10 to 12 wherein the monomer units (a) or (b) are formed in situ from pre-monomers, bearing a monophenolic moiety.
13. ~~M~~(Amended) A method of claim 12 where the pre-monomers are selected ~~in~~from the group consisting ~~in~~of dihydrokaempferol, armadendrin, p-hydroxybenzaldehyde, PHBA, tyrosol, p-coumaric acid, apigenin, kaempferol, pelargonin, genistein, tyrosine, tyramine, 5-hydroxy-indole and mixtures thereof.

